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## [12] Utility Model Patent Specification

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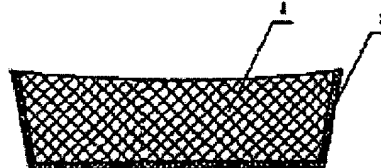
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### [54] Title of the Utility Model

Composite Multicolor Flocked Sole

### [57] Abstract

The present utility model relates to a surface-processed sole. It is characterized by: a flocked layer (2) that is placed on the outer surface or partial side surface of a sole base material (1) using techniques including flocking technology. It is also possible to print a colored decorative pattern before or after flocking to form a composite multicolor flocked sole. It has characteristics of beauty of external appearance, comfort to the foot, wear resistance, anti-slipping, aging resistance, durability in washing, color-fastness, etc. When combined with corresponding upper sides, it is possible to manufacture all kinds of shoes, sandals, slippers, etc.



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## Claims

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1. A composite multicolor flocked sole, characterized by: on the outer surface or partial side surface of a sole base material (1), there is a flocked layer (2).

2. The sole described in claim 1, wherein: between the side surface of said sole base material (1) and the flocked layer (2), there is a color ink layer (3), and the flocked layer (2) is a transparent flocked layer.

3. The sole described in claim 1, wherein: on the flocked layer (2) on said sole side surface, there is a color ink layer (4).

4. The sole described in claim 1 or 2, wherein: on the flocked layer (2) on said sole side surface, there is partially a single-layer or multiple-layer re-flocked layer (5).

5. The sole described in claim 3, wherein: on the color ink layer (4) on said sole side surface, there is partially a single-layer or multiple-layer re-flocked layer (5).

## Explanations

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### Composite Multicolor Flocked Sole

The present utility model relates to a surface-processed sole.

Today, surface processing of soles domestically and abroad is generally performed using chemical ink spraying. However, chemical ink is hazardous to the human body and pollutes the environment. Soles that are subjected to chemical ink spraying have disadvantages such as the tendency to fade, tendency to burn, surface roughness, etc.

The purpose of the present utility model is to overcome the above disadvantages of soles and to provide a sole in which the surface is nontoxic, does not fade, does not tend to burn, and is resistant to aging.

The purpose of the present utility model is realized by using techniques including flocking technology to place a flocked layer on the outer surface or partial side surface of a sole base material. The flocked layer can be of various colors or multicolor.

With the present utility model, it is possible to place a flocked layer on the outer surface of a sole after first subjecting to printing and coloring such as silk screening, thermal transfer printing, water transfer printing, gold stamping, spray coloring, etc. It is also possible to perform printing and coloring on the flocked layer after first flocking. It is also possible to further partially flock on top of a flocked layer on the side surface of the sole, for example patterns such as flowers and plants, animals, letters and characters, trademarks, etc. Partial additional flocking can be done on one layer or in multiple layers; in multiple layers, it can produce three-dimensional patterns. It is also possible to heat stamp various decorative patterns to enhance the sense of three-dimensionality.

The flocking technique can give improvement to soles that originally have rough outer surfaces. Composite techniques of printing, coloring, and flocking are suitable for all kinds of sole base materials, and all kinds of multicolor soles can be manufactured. With the flocked soles or soles partially flocked on the sides, together with corresponding upper sides from the shoe factory, it is possible to manufacture all kinds of shoes, sandals, slippers, etc. For slippers, it is possible to place flocked layers continuously with the upper surfaces of the soles.

The present utility model has characteristics as follows: beauty of external appearance, enhanced sense of three-dimensionality, comfort to the feet, wear resistance, anti-slipping, non-flammability of the flocked layer, aging resistance, durability in washing, color-fastness, etc.

The structure of the present utility model is further explained below with working examples together with the drawings.

Fig. 1 to Fig. 5 respectively are structural sectional views of composite multicolor flocked soles of Working Examples 1-5.

In the drawings, 1 is a sole base material, ~~2 is a flocked layer~~, 3 and 4 are printed ink layers, and ~~5 is a flocked layer~~.

Working Example 1, refer to Fig. 1: Flocking technology is used to make a flocked layer 2 on the outer surface of a shoe base material 1, and the flocked layer can be of various colors or multicolored.

Working Example 2, refer to Fig. 2: First, technology such as silk screening, water transfer printing, gold stamping or spraying is used to perform printing and coloring on the side surface of a sole base material 1, and a printed ink layer 3 with various colored patterns is formed. Then, flocking technology is used to make a flocked layer 2 on the outer surface of the sole. The flocked layer is a transparent flocked layer, and the printed ink layer 3 on the lower layer can be seen through it.

Working Example 3, refer to Fig. 3: First, a flocked layer 2 is made on the outer surface of a sole base material 1, then printing and coloring are performed on top of the flocked layer 2 to form a printed ink layer 4, and the patterns are clearer and brighter.

Working Example 4, refer to Fig. 4: Based on the above working examples (taking Working Example 2 as an example), flocking is performed on the side surface of the sole following patterns such as flowers and plants, animals, letters and characters, trademarks, etc. to form partial re-flocked layers 5. The partial re-flocked layers can be single-layer or multiple-layer, and when multiple-layer, the sense of three-dimensionality is more enhanced, and the effect is better.

Working Example 5, refer to Fig. 5: Flocking technology is used to partially make flocked layers 5 on the side surface of a sole base material 1. The flocked layers can be patterns such as flowers and plants, animals, letters and characters, trademarks, etc., and the partial flocking enhances the decorativeness.

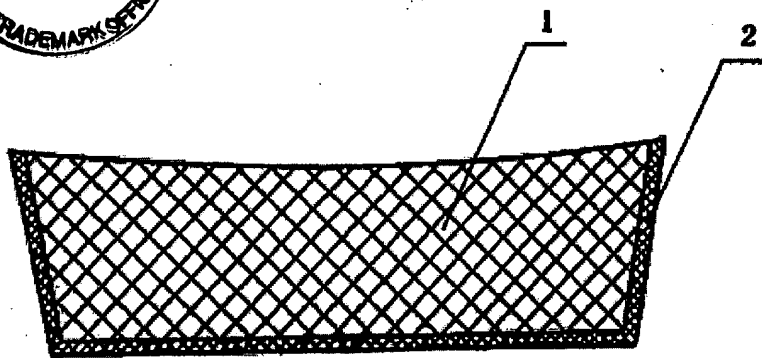


Figure 1

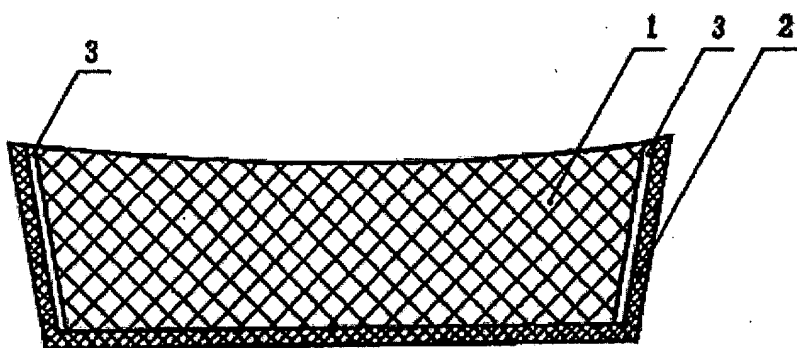


Figure 2

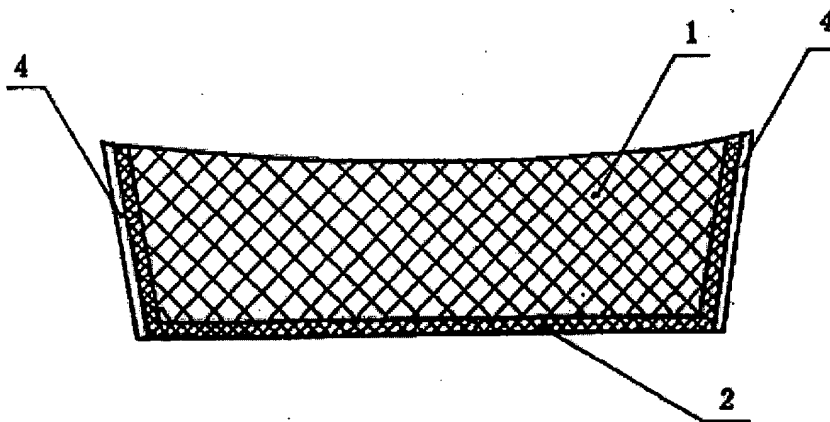


Figure 3

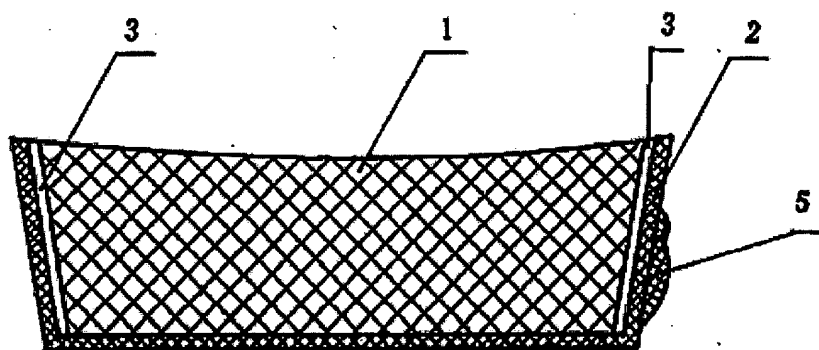


Figure 4

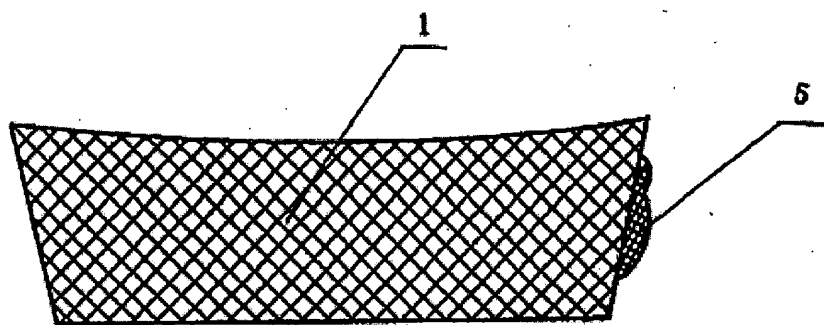


Figure 5